



**OVARIAN CANCER** forms in tissues of the ovary. Most ovarian cancers are either ovarian epithelial carcinomas (cancer that begins in the cells on the surface of the ovary) or malignant germ cell tumors (cancer that begins in egg cells).<sup>1</sup> Ovarian cancer is the fifth leading cause of cancer death among women in Indiana. In Indiana, during 2013, there were 398 new cases of ovarian cancer diagnosed, and 299 ovarian cancer related deaths. Ovarian cancer causes more deaths than any other cancer of the female reproductive system.<sup>2</sup>

**Table 1. Burden of Ovarian Cancer—Indiana, 2009–2013\***

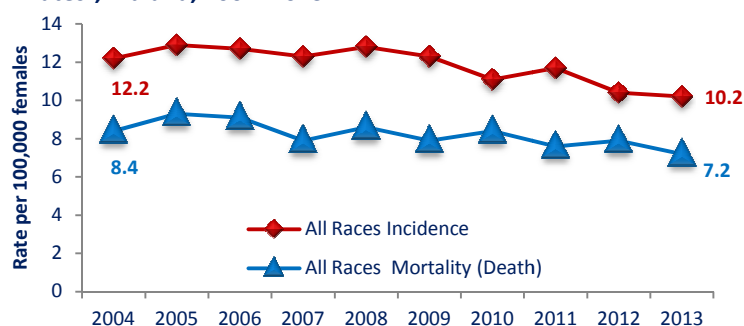
	Average number of cases per year (2009–2013)	Rate per 100,000* (2009–2013)	Number of cases (2013)	Rate per 100,000* (2013)
Indiana Incidence	428	11.1	398	10.2
Indiana Deaths	80	7.8	299	7.2

\*Age-adjusted

Source: Indiana State Cancer Registry

**Indiana's** ovarian cancer incidence rate was 10.2 per 100,000 females in 2013, down from 12.2 in 2004. Mortality also decreased from 2004 to 2013 (8.4 to 7.2 per 100,000 females). However, neither decrease was significant.

**Figure 1. Ovarian Cancer Incidence and Mortality (Death) Rates\*, Indiana, 2004–2013**



\*Age-adjusted.

Source: Indiana State Cancer Registry.

## Who Gets Ovarian Cancer Most Often?

The most important risk factor is a strong family history of breast or ovarian cancer. Women who have had breast cancer, or who have tested positive for inherited mutations in *BRCA1* or *BRCA2* genes are at increased risk. Studies indicate that preventive surgery to remove the ovaries and fallopian tubes in these women can decrease the risk of ovarian cancer.<sup>1</sup>

Some additional risk factors include:

- **Age.** The risk of developing ovarian cancer increases with age. Ovarian cancer is rare in women younger than 40. Most ovarian cancers develop after menopause. In Indiana during 2009 to 2013, 62% of all ovarian cancers were found in women 60 years of age or older.
- **Smoking.** Tobacco smoking increases risk of mucinous ovarian cancer (cancer that begins in the outer lining of the ovary).
- **Other medical conditions.** Other conditions, such as pelvic inflammatory disease and a genetic condition called hereditary nonpolyposis colorectal cancer (also called Lynch syndrome), may indicate an increased risk for ovarian cancer.
- **History of hormone replacement therapy (HRT).** Studies have shown that the use of estrogen alone as menopausal hormone therapy can increase risk for developing ovarian cancer.
- **Obesity.** Heavier body weight may also be associated with increased risk. Overall, it seems that obese women (those with a body mass index of at least 30) have a higher risk of developing ovarian cancer.
- **Reproductive history.** Women who have been pregnant and carried it to term have a lower risk of ovarian cancer than women who have not. The risk decreases with each full-term pregnancy. Breastfeeding may lower the risk even further.



## Common Signs and Symptoms

Early stages of ovarian cancer usually have no obvious symptoms. Some women may experience persistent, nonspecific symptoms including:

- Bloating
- Pelvic or abdominal pain
- Difficulty eating or feeling full quickly
- Urinary urgency or frequency

The American Cancer Society suggests that women who experience these types of symptoms on a regular basis for more than a few weeks should seek prompt medical evaluation. The most common sign of ovarian cancer is swelling of the abdomen, which is caused by the accumulation of fluid.

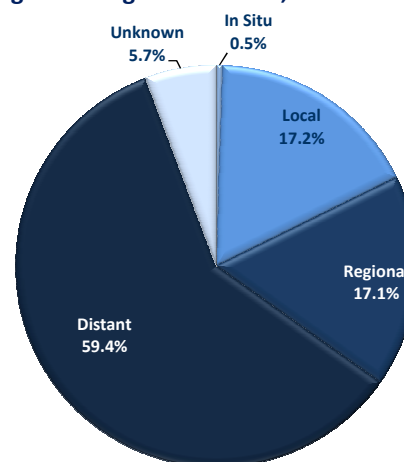
## Early Detection

In Indiana, 17.7 percent of ovarian cancers are found at an early stage. When ovarian cancer is found early at an *in situ* stage (meaning the cancer is at the earliest stage) or *localized* stage (meaning the cancer has not spread), about 92 percent of patients live longer than five years after diagnosis. Currently, there is no accurate test for early detection. Often, ovarian cancer detected during a routine pelvic examination is at an advanced stage (a *regional* or *distant* stage, meaning the tumor has spread to other parts of the body) [See Figure 2]. For women at high risk of ovarian cancer, or women with symptoms, a thorough pelvic examination in combination with a transvaginal ultrasound may be used to evaluate women with symptoms. A blood test for the tumor marker CA125 may be offered, though this strategy has not yet been proven effective in screening even high-risk groups.

## GET INVOLVED: Join the Indiana Cancer Consortium (ICC)

- The ICC is a statewide network of over 100 agencies including the Indiana State Department of Health.
- ICC seeks to reduce the cancer burden in Indiana through the development, implementation and evaluation of a comprehensive plan that addresses cancer across the continuum from prevention through palliation.
- Become a member at [www.indianacancer.org](http://www.indianacancer.org).

Figure 2. Percent of Ovarian Cancer Cases Diagnosed During Each Stage\* — Indiana, 2009 – 2013



\*Age-adjusted.

Source: Indiana State Cancer Registry.

## Community Resources

- For an ovarian cancer toolkit with resources and information, visit [www.indianacancer.org/ovarian-cancer-toolkit/](http://www.indianacancer.org/ovarian-cancer-toolkit/).
- To get help with tobacco cessation, call the [Indiana Tobacco Quitline](http://www.QuitNowIndiana.com) at 1-800-QUIT-NOW (1-800-784-8669), or visit [www.QuitNowIndiana.com](http://www.QuitNowIndiana.com).
- To learn more about how to support healthy eating and physical activity throughout Indiana, visit the Indiana Healthy Weight Initiative at [www.inhealthyweight.org](http://www.inhealthyweight.org).
- For resources and educational materials, contact Ovar'coming Together at 317-925-6643, or visit them online at [www.ovariancancerIN.org](http://www.ovariancancerIN.org).

## References

1. National Cancer Institute. [www.cancer.gov/cancertopics/types/ovarian](http://www.cancer.gov/cancertopics/types/ovarian).
2. American Cancer Society. Cancer Facts and Figures 2015. Atlanta: American Cancer Society, 2015. Available online at [www.cancer.org/research/cancerfactsstatistics/cancerfactsfigures2015/index](http://www.cancer.org/research/cancerfactsstatistics/cancerfactsfigures2015/index).